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ABSTRACT

In a study of the significance of private speech, 11 learning disabled (LD) and 16 non LD children (mean age 10 years) were given several cognitive tasks, and their private speech during play and school work was assessed. LD Ss performed less well on the cognitive tasks than non LD Ss. Children who used high rates of private speech performed in a more immature manner on the cognitive tasks, supporting the notion that private speech is related to cognitive development and not just chronological age. When experimental conditions were varied, Ss talked more when alone in a room than when an adult was present, and they tended to talk more in academic-task than in play conditions. (Author/CL)

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ATTENTION AND PRIVATE SPEECH IN LEARNING DISABLED CHILDREN

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ABSTRACT

LEARNING DISABLED AND NON-LEARNING DISABLED CHILDREN WERE GIVEN SEVERAL COGNITIVE TASKS AND THEIR PRIVATE SPEECH DURING PLAY AND SCHOOL WORK WAS ASSESSED IN AN EFFORT TO EXTEND OUR UNDERSTANDING OF THE SIGNIFICANCE OF PRIVATE SPEECH. LEARNING DISABLED CHILDREN PERFORMED LESS WELL ON THE COGNITIVE TASKS THAN NON-LEARNING DISABLED CHILDREN. CHILDREN WHO USED HIGH RATES OF PRIVATE SPEECH PERFORMED IN A MORE IMMATURE MANNER ON THE COGNITIVE TASKS, SUPPORTING THE NOTION THAT PRIVATE SPEECH IS RELATED TO COGNITIVE DEVELOPMENT AND NOT JUST CHRONOLOGICAL AGE. WHEN EXPERIMENTAL CONDITIONS WERE VARIED, CHILDREN TALKED MORE WHEN ALONE IN A ROOM THAN WHEN AN ADULT WAS PRESENT, AND THEY TENDED TO TALK MORE IN ACADEMIC-TASK THAN PLAY CONDITIONS.

SUBJECTS

11 LEARNING DISABLED ($\bar{M}$ AGE= 115.1 MONTHS) AND 16 NON-LEARNING DISABLED ($\bar{M}$ AGE= 120.4 MONTHS) CHILDREN.

PROCEDURE

A. THE FOLLOWING ATTENTIONAL TASKS WERE GIVEN:

1) CENTRAL-INCIDENTAL LEARNING (CIL) TASK (HAGEN, 1967)

THIS TASK ENTAILS RECALL OF BOTH TASK-RELEVANT AND TASK-INCIDENTAL INFORMATION. SEVEN CARDS, EACH CONTAINING A LINE DRAWING OF AN ANIMAL AND A HOUSEHOLD OBJECT, ARE PLACED IN AN ARRAY IN FRONT OF THE CHILD. EACH PICTURE IS SHOWN TO THE CHILD FOR TWO SECONDS AND THEN TURNED OVER. THE CHILD IS THEN ASKED THE LOCATION OF A PARTICULAR ANIMAL (NEVER A HOUSEHOLD OBJECT) ("CENTRAL MEMORY"). AFTER 14 TRIALS, THE CHILD IS ASKED TO MATCH THE HOUSEHOLD OBJECTS WITH THE ANIMALS AS THEY HAD APPEARED ON EACH OF THE CARDS ("INCIDENTAL LEARNING").

2) SPEEDED CLASSIFICATION (SC) TASK (STRUTT, ANDERSON & WELL, 1975)

THIS TASK INVOLVES ASKING THE CHILD TO SORT 12 DECKS OF 24 CARDS EACH INTO TWO PILES. EACH CARD IS MARKED WITH ONE TO THREE DICHOTOMOUS STIMULI: A FORM STIMULUS (CIRCLE OR SQUARE), A LINE STIMULUS (VERTICAL OR HORIZONTAL), AND/OR A STAR STIMULUS (PLACEMENT OF A STAR ABOVE OR BELOW A CENTRAL POINT). UPON PRESENTATION, ONE STIMULUS ATTRIBUTE (EG. FORM) IS DESIGNATED AS RELEVANT, A SAMPLE OF EACH VALUE (EG. SQUARE, CIRCLE) IS PROVIDED FOR MATCHING, AND THE CHILD IS INSTRUCTED TO SORT THE DECK AS QUICKLY AS POSSIBLE INTO TWO PILES.

B. USE OF PRIVATE SPEECH WAS EXAMINED DURING A SECOND SESSION UNDER THE FOLLOWING SIX CONDITIONS:

1) EXPERIMENTER PRESENT-- THE EXPERIMENTER SAT OUT OF DIRECT GAZE OF THE CHILD AND WAS MINIMALLY RESPONSIVE TO THE CHILD.

   A. FREE PLAY

   B. EASY ACADEMIC TASK-- A READING TASK ONE YEAR BELOW LEVEL OF FUNCTIONING.

   C. HARD ACADEMIC TASK-- A READING TASK ONE YEAR ABOVE LEVEL OF FUNCTIONING.

2) EXPERIMENTER ABSENT

   A. FREE PLAY

   B. EASY ACADEMIC TASK

   C. HARD ACADEMIC TASK

RESULTS

1) PRIVATE SPEECH USAGE

--LEARNING DISABLED CHILDREN DID NOT USE SIGNIFICANTLY MORE PRIVATE SPEECH (ALTHOUGH THERE WAS A TREND IN THIS DIRECTION).

WITH LEARNING DISABLED AND NON-LEARNING DISABLED CHILDREN COMBINED:

A. CHILDREN TALKED MORE IN THE CONDITIONS WHERE THE EXPERIMENTER WAS ABSENT THAN WHEN PRESENT ($p < .02$).

B. CHILDREN TENDED TO TALK MORE IN THE ACADEMIC TASK CONDITIONS THAN DURING FREE PLAY ($p < .11$).

2) ATTENTIONAL SKILL

--LEARNING DISABLED CHILDREN PERFORMED LESS WELL ON THE COGNITIVE TASKS THAN NON-LEARNING DISABLED CHILDREN.

A. LEARNING DISABLED CHILDREN SORTED CARDS MORE SLOWLY ON THE SPEEDED CLASSIFICATION TASK THAN DID NON-LEARNING DISABLED CHILDREN.

B. ON THE CENTRAL INCIDENTAL LEARNING TASK, THERE WAS NO SIGNIFICANT DIFFERENCE BETWEEN GROUPS ON THE SELECTIVE ATTENTION INDEX.

3) COGNITIVE SIGNIFICANCE OF PRIVATE SPEECH (2 GROUPS OF CHILDREN COMBINED)

--AMOUNT OF PRIVATE SPEECH WAS INVERSELY RELATED TO PERFORMANCE ON BOTH ATTENTION MEASURES (WITH AGE CONTROLLED).

A. Children who vocalized most (across conditions) made the most errors ($p < .003$) and sorted cards more slowly ($p < .002$) on the Speeded Classification task.

B. On the Central Incidental Learning task, the Selective Attention Index was <u>positively</u> related to the amount of vocalization.

TABLE 1
MEANS FOR AMOUNT OF PRIVATE SPEECH ACROSS CONDITIONS A

	LD CHILDREN	NON-LD CHILDREN	ALL CHILDREN
EXPERIMENTER PRESENT			
PLAY	20.2	5.9	10.12
EASY ACADEMIC	24.2	17.5	19.47
DIFFICULT ACADEMIC	43.4	16.2	24.18
EXPERIMENTER ABSENT			
PLAY	43.4	16.8	24.65
EASY ACADEMIC	66.0	28.2	39.29
DIFFICULT ACADEMIC	72.0	34.3	45.41

A: NUMBERS REPRESENT SECOND PER PERIOD OF ANALYSIS

TABLE 2

PARTIAL CORRELATIONS BETWEEN PRIVATE SPEECH AND ATTENTION MEASURES, AGE CONTROLLED [A]

	PRIVATE SPEECH					
		EXPERIMENTER				
	TOTAL	PRESENT	ABSENT	PLAY	EASY	HARD
SPEEDED CLASSIFICATION						
TIME/DECK	.60[D]	.33	.75[E]	.69[D]	.62[D]	.48[B]
# ERRORS	-.21	-.41	-.04	.20	-.29	-.29
CENTRAL-INCIDENTAL LEARNING						
CENTRAL MEMORY	.24	.34	.14	.21	.20	.25
INCIDENTAL LEARNING	-.17	.01	-.29	-.20	-.17	-.13
%C - %I	.42[B]	.24	.50[C]	.48[B]	.39	.35

A N = 17

B $p < .05$

C $p < .025$

D $p < .01$

E $p < .001$

FIGURE 1

MEANS FOR AMOUNT OF PRIVATE SPEECH (TWO GROUPS COMBINED)